No. 838,683. PATENTED DEC. 18, 1906.

J. D. CALDWELL.

CLOTHES MARKING APPARATUS.

APPLICATION FILED DEC. 4, 1905.

2 SHEETS—SHEET 1.

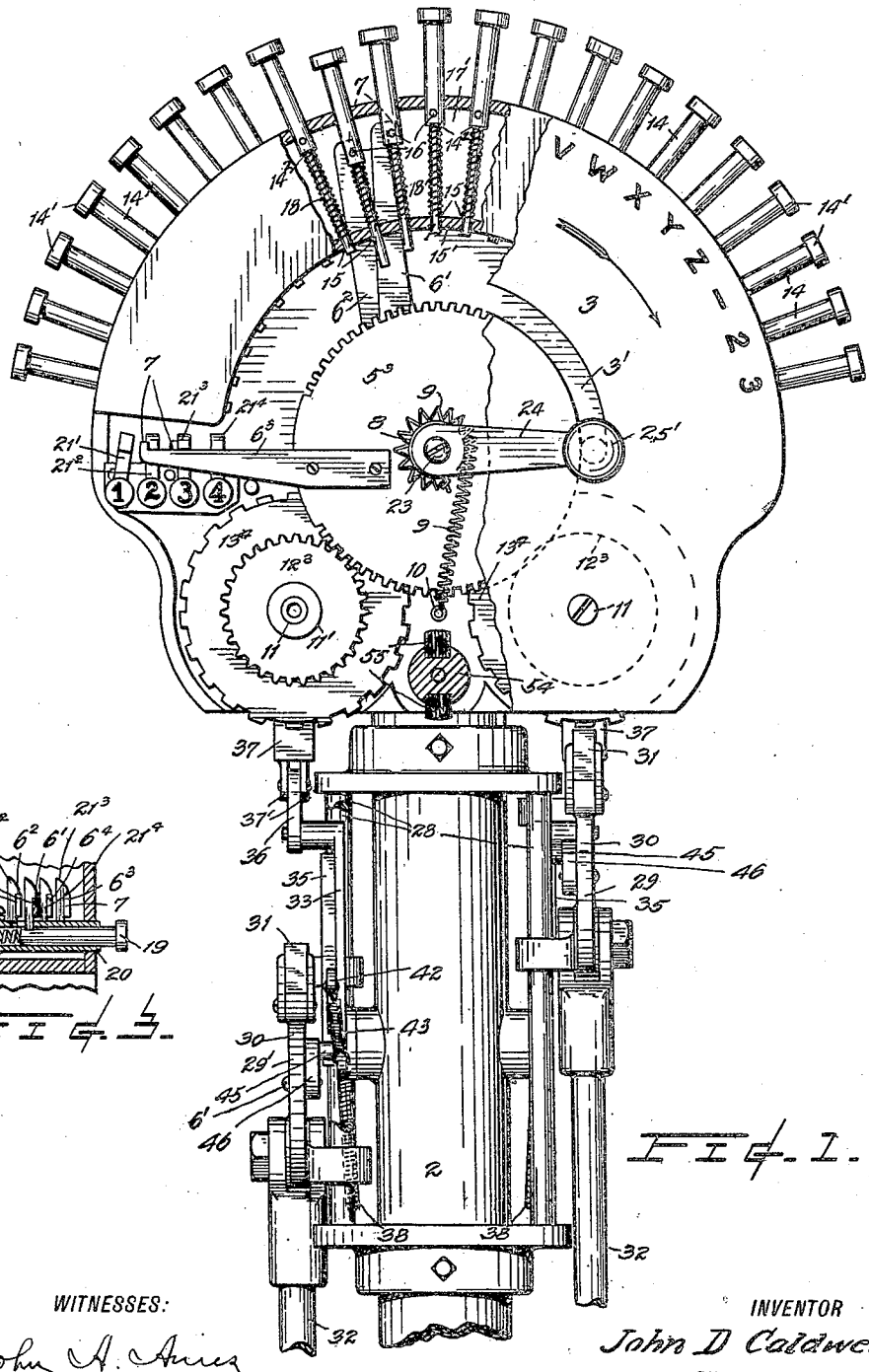

Fig. 3.

Fig. 1.

WITNESSES:

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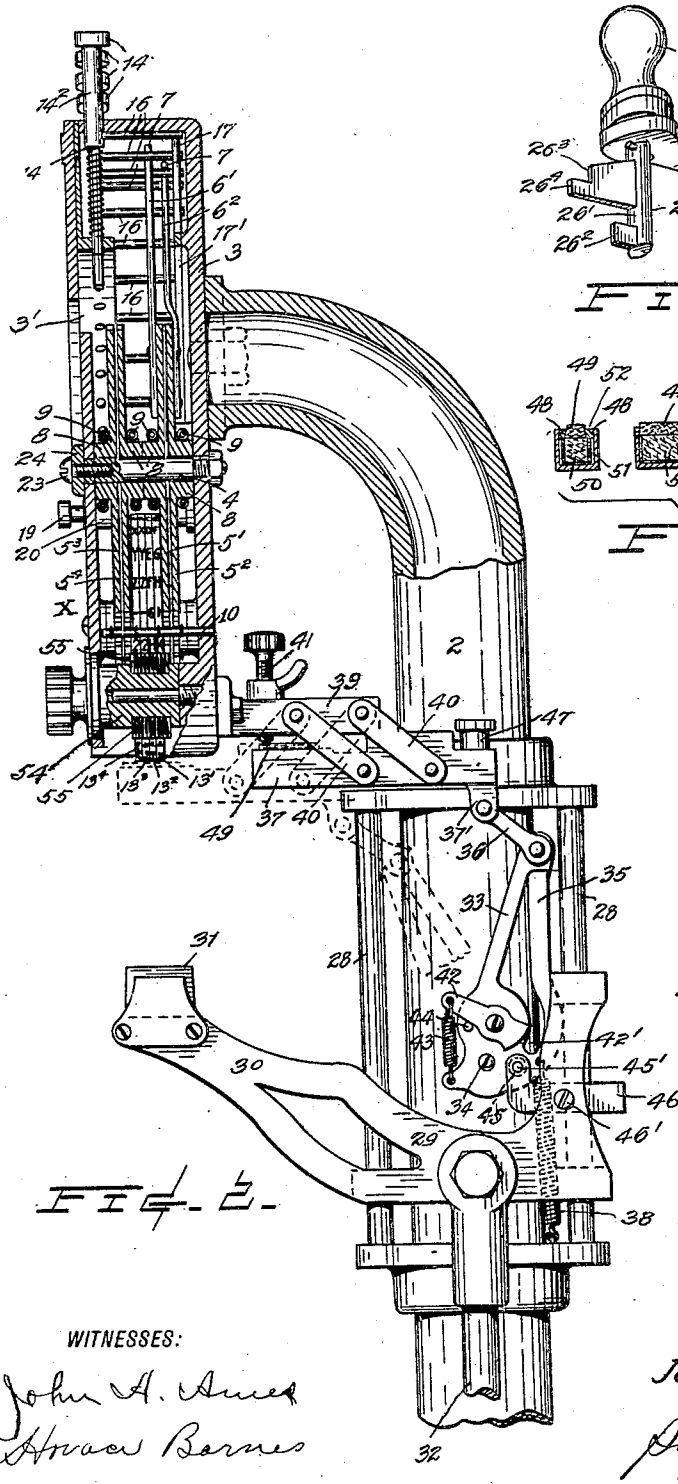

FIG. 2.

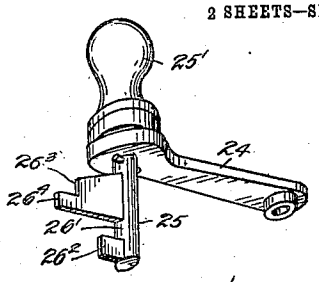

FIG. 6.

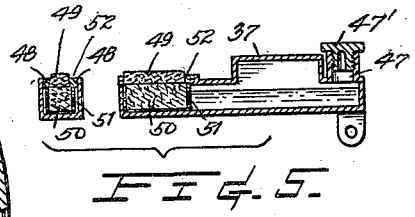

FIG. 5.

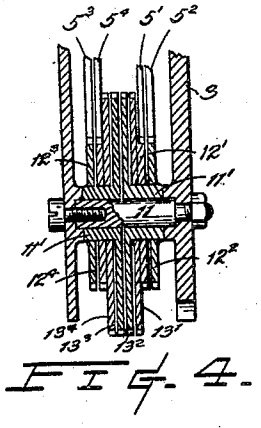

FIG. 4.

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UNITED STATES PATENT OFFICE.

JOHN DAVID CALDWELL, OF SEATTLE, WASHINGTON, ASSIGNOR TO CALDWELL SORENSON LINNOGRAPH COMPANY, OF SEATTLE, WASHINGTON, A CORPORATION OF WASHINGTON.

CLOTHES-MARKING APPARATUS.

No. 838,683. Specification of Letters Patent. Patented Dec. 18, 1906.

Application filed December 4, 1905. Serial No. 290,155.

To all whom it may concern:

Be it known that I, JOHN DAVID CALDWELL, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Clothes-Marking Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a front elevation, partly in section, of mechanism embodying my invention. Fig. 2 is a side elevation of the same with the upper portion in section. Figs. 3, 4, and 5 are detail sectional views, and Fig. 6 is a perspective view of the radial arm-releasing lever shown detached.

This invention relates to improvements in that class of marking-machines set forth in patent application Serial No. 214,267, filed June 27, 1904, the purpose of the improvements being to simplify and perfect the construction in various particulars.

To such end the present invention consists in certain novel features and combinations thereof, which will be described hereinafter in connection with their illustrated preferred embodiment and more definitely pointed out in the appended claims.

In the drawings the reference-numeral 2 designates a standard or pedestal upon which the operative parts of the machine are supported and is desirably formed with a forwardly-curved upper extremity, to which is bolted or otherwise attached a casing 3. Within this casing is a fixed stud 4, upon which are loosely mounted a plurality of disks $5'$, 5^2, 5^3, and 5^4, respectively provided with radial arms $6'$, 6^2, 6^3, and 6^4 of unequal lengths and terminating in hooked ends 7. The said disks are each provided with a hub 8, about which are respectively extended coil-springs 9, having their opposite ends respectively secured to the several said disks and to a non-movable pin 10 in the casing and tending to rotate the connected disks in the direction indicated by the arrow in Fig. 1. Mounted loosely upon a fixed mandrel or mandrels 11, which extend through the casing, are one or more series or groups of gear-wheels $12'$ 12^2 12^3 12^4, having their teeth mesh with corresponding teeth provided in the peripheries of said disks, and each such gear-wheel is integrally connected with a type-wheel $13'$ 13^2 13^3 13^4, also mounted upon the respective said mandrel by positioning the respective gears and type-wheels in the relation shown in Fig. 4—that is to say, with the former in juxtaposition with each other, and where four are employed in each group, as in the illustration, two of the gear-wheels are placed in front and two in the rear within each such group. The gear-wheels $12'$ 12^4, which are adjacent to the type-wheels $13'$ 13^4, are directly connected, and the other type-wheels 13^2 13^3 have protruding hubs $11'$, which extend loosely through the first-mentioned gear and type-wheels and are rigidly connected to the outermost gear-wheels. The upper portion of said casing is desirably formed concentric of the common axis of said disks, and extending radially through the arc-wall thus provided is a plurality of keys 14, arranged in a single transverse row and having enlarged heads $14'$, upon which may be marked designating characters, as alphabetic letters or numerals corresponding to embossed type characters x upon the periphery of each of the aforesaid type-wheels, and the inner portions of said keys may be of reduced diameter and extend through a series of apertures 15, formed in an inner concentric wall $15'$ of the casing. Fixedly attached to or provided upon the several said keys are longitudinal bars 16, which extend into or through radially-disposed slots 17 of an inner partition $17'$ adjacent to the rear of the casing. Coil-springs 18 are provided for and mounted upon said keys intermediate of the wall $15'$ and the respective key-shoulders 14^2.

Positioned at the left-hand side of the casing 3 are dog devices (see Figs. 1 and 3) for independently retaining the said radial arms thereat in locked engagement and opposing the action of the springs 9, which tend to move the disks in the arrow-indicated direction. These dog devices comprise horizontally-arranged plungers 19, inclosed in tubes 20, which are rigidly secured to the casing, and through elongated apertures 21 therein protrude dogs $21'$ 21^2 21^3 21^4 of the respective said plungers and are individually pressed forwardly by springs 22, placed within each of the tubes to the rear of the contained plunger. These dogs are disposed in different planes, which coincide with those of the respective said radial arms $6'$ 6^2 6^3 6^4. Loosely

fulcrumed in the axis of the stud 4, as by a cap-screw 23, is a lever-arm 24, having extending through its outer end a rectangularly-disposed swivel-pin 25, with an operating and controlling knob 25′ at its outer extremity, while its inner portion extending through a concentric slot 3′ of the casing 3 terminates in proximity of the partition 17. Provided upon the inner portion of this swivel-pin is a number of wards 26^2 26^3 26^4 of unequal lengths arranged in the respective planes of the arms 6^2 6^3 6^4, so that when the lever-arm is swung from its normal position at the right-hand end of the slot 3′ toward its other end and with the wards in advance the most extended ward 26^4 will contact with the shortest said radial arm 6^4, the ward 26^3, next shorter in length, with the arm 6^3, the shortest ward 26^2 with the next longer arm 6^2, while the longest arm 6′ will be contacted directly against the pin, as at 26′. The purpose of thus assembling the wards is to enable a shorter radial arm being first disconnected from any of said key-bars with which it may be engaged by the sweeping movement of the lever-arm before a longer radial arm is disengaged from a key-bar and carried thereagainst to interfere with the outward travel of a key as it is released from engagement with a shorter radial arm.

The operation of the before-described parts of the invention is as follows: The key of the proper denomination is first borne inwardly by a finger-pressure of the operator thereupon and against the action of its spring 18, thereby depressing the bar of that key to within the range of the radial arms, and the longest of the arms, as 6′, is then disengaged from its dog and is moved around with the attached disk 5′ by the spring 9 thereto connected until the revolving arm strikes against such depressed key-bar, which is then released by and forced outwardly by the spring 18 of the key; but the bar thereof is intercepted in its outward travel by the hook of the arm 6′, and thereby locked. In thus partially rotating the intermeshing teeth of the disk and gear-wheels rotate coincidently the respective type-wheel 13′ of both groups and limits the rotation thereof to present at their lower side and in printing position a character identical with that of the key previously actuated and locked in adjusted position. The leading type-wheel of each group being, as just explained, predeterminately set and locked by a key-bar, the other type-wheels may be similarly treated by disengaging the respective arms from the dogs 21^2, 21^3, and 21^4 successively after first depressing the key whereat it is required to arrest the travel of the radial arms to place the type characters into predetermined printing positions. It will be noted that the longest of the said radial arms is first released in order that the key-bar engaged thereby will be held at sufficient distance from the axis of gyration to permit of the following next shorter radial arm passing freely by the bar, and so on with each succeeding setting of the type-wheels, and should it be desired to present two or more characters of the same denomination into printing position the same key will serve to intercept any number of the type-wheels if it is pressed down to present the bar thereof in position to interfere with the following shorter radial arm as they are individually released by the dogs. The type-wheels after being set and operated with are returned to their original positions by swinging the lever-arm 24 with the aforesaid wards in advance, as before explained. When the type-wheels rotatably approach their initial positions, by manipulating the lever-arm, as above stated, the pin of the latter is rotated to bring all of the radial arms into contact therewith instead of with the wards, when by a continued motion the radial arms are thrust into engagement with the said dogs, and the lever-arm may be swung back out of the path to be taken by the various said radial arms during the succeeding setting operations.

Formed or provided upon the said standard are rods 28, forming guides upon each side for the vertically-movable carriers 29 29′, having forwardly-projecting bracket-arms 30, provided with platen-blocks 31, of rubber or other suitable material, so disposed as when raised at the will of the operator to impinge against the respective said type-wheels and cause the set type to imprint their characteristics upon the fabric or article which is to be marked and which is supported upon either of the platens, which is then elevated by a foot-pressure upon a pedal (not shown in the drawings) provided for each said carrier and connected therewith by reach-rods 32. Apparatus which is actuated during the upward movement of the said carriers is provided for each of the groups of type-wheels to apply ink thereupon and includes upon each side an ink-dauber 37 *per se* and an actuating vibratory lever 33 therefor, which is fulcrumed intermediate of its length by a pivot 34 to the machine-standard. This lever is provided along the rear edge of its upper and longer arm with a laterally-protruding rib 35 and is likewise connected by a link 36 with lugs 37′ of the dauber, whereby as the connected arm of the lever is forced forwardly against the action of the retractile spring 38 the dauber is moved thereby in the same direction and by reason of its being suspended from the frame-limb 39 by the pairs of links 40 is caused to travel in a curved path and impinge against the type-wheels at the termination of its forward stroke and while ascending obliquely, such travel being regulated by an adjustment-screw 41 passing through said limb.

The referred-to forward movement of the longer arm of the lever 33 is accomplished by providing upon the same adjacent to its fulcrum an auxiliary or trigger lever 42, pivotally connected to the larger one and normally maintained at an approximately right angle with the latter by a spring 43, connecting ends of both such levers, as shown, and causing the longer arm of the trigger-lever to resiliently bear against a stop 44 of the lever 33. The shorter arm of the trigger-lever 42 is provided with a cam end face 42′, which is arranged within the same vertical plane with an antifriction-roller 45, mounted upon a stud 45′ of a bent arm 46, which latter is adjustably secured to the carrier, as by a screw 46′. The carrier in its ascensions causes said roller to impinge said cam-face of the trigger-lever 42, thereby forcing the long arm of lever 33 to be moved into the position represented by the broken lines in Fig. 2, during which occurrence the trigger-lever 42 has been swerved out of the track of the upwardly-moving roller to coincidently move the lever 33 when the spring 38 can assert itself to bring the last-named lever back to the position represented by the full lines in this view and the ink-dauber correspondingly. Should the spring, however, not retract the dauber and the connected lever with sufficient despatch to insure its being well out of the way of the ascending platen, this function is positively attained by said roller forcibly striking the lever-rib 35 and deflecting the same back to its normal inoperative position. The platen is upon the release or removal of pressure from the pedal thereof carried downwardly by the combined weight of the carrier and the several connected parts, and during this movement the said roller strikes the shorter arm of the trigger-lever and tilts the same downwardly to allow of its passing therebeneath.

While any suitable ink-dauber may be utilized with this invention, that illustrated herewith has proved to be so satisfactory in practice as to meet every requirement and which I will now describe.

Reference being had to Fig. 5, a dauber, one for each set of type-wheels, comprises a chambered member 37, forming a receptacle for the marking-ink, which is introduced through an apertured neck 47, positioned, for convenience in charging, at the rear end and having a screw-plug closure 47′. At the forward end said member is open on top and has the side edges flanged inwardly, as at 48, with which may interfit the like edges of an absorbent layer 49 of felt or its equivalent. Immediately beneath this layer is an elastic porous body 50, which may also be of felt and is inclosed in a perforated open-top box 51, which is removably submerged in the reservoir of ink. The purpose of these devices is to provide a medium for absorbing the ink and delivering the same as demanded to said superimposed felt layer, and from which it is wiped upon the type, and by such construction permitting of said upper layer being at intervals replaced by new ones when clogged with dried ink, as will occur after the machine remains idle for a few hours. To better support said upper felt layer and to facilitate its removal and replacement, a frame 52 may advantageously be used for holding the same, and which can then be more accurately and reliably fitted to the flanges 48 than is practicable with ordinary felt alone.

To clean the type-wheels, a rotatable plug 54 is mounted in a plane intermediate of the groups, where two are utilized, and having in its circumference two opposite brushes 55, which may be rotated to bear against the type, and as the wheels carrying the latter are rotated backward and forth by the successively-opposing action of the lever-arm and the springs of the disks the dirt or ink may be thoroughly removed, and which may be facilitated by applying alcohol or the like to the said brushes.

The purpose of having two sets or groups of type-wheels is to afford means of utilizing two sizes of characters. Those of the smallest size being in one group would be employed for marking small articles, while the larger type of the other group for larger articles, and either size may be brought into play by the operator bringing into action the respective platen. Should it be desired, however, to use but a single size of type, then one group can be omitted.

It is obvious that the number of type-wheels of either or both groups may be varied to suit any particular requirement, as also in other respects the various details of the invention may be changed without departing from the spirit of the invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a marking-machine, the combination of a plurality of type-wheels, individual spring-actuated mechanism for each wheel, means for detachably maintaining said wheels in their normal inoperative positions, and a single series of keys, the keys of said series being adapted to individually and predeterminately limit the movement of any or all of the inoperatively-positioned type-wheels.

2. In a marking-machine, the combination with a plurality of type-wheels and spring-actuated mechanism provided individually for each such wheel, of devices for detachably maintaining said wheels in their normal inoperative positions, and means for predeterminately and interchangeably regulating the positions of the respective wheels as they are released from said devices.

3. In a marking-machine, the combination of peripherally-toothed disks, a correspond-

ing number of type-wheels operatively connected with the respective disks, devices for retaining said type-wheels in their inoperative positions, means for predeterminately disconnecting such devices from their operative engagement with said disks, mechanism intermediate the disks and type-wheels, springs connected with each of said disks and tending to cause the latter to be rotatably moved from engagement with said devices as the latter are released, and means comprising a series of keys any one of which is adapted to arrest the travel of each or all of the said disks and move the type-wheels into predetermined printing positions.

4. In a marking-machine, the combination of a plurality of type-wheels, a corresponding number of gear-wheels respectively connected therewith, a disk for each such gear-wheels and in continuous mesh therewith, springs tending to rotate said disks but controlled at the will of the operator through the medium of a series of keys whereby each of said disks may be individually arrested by any of said keys predeterminately.

5. In a marking-machine, the combination of type-wheels, gear-wheels rotatably connected therewith, disks having peripheral teeth engaging with said gear-wheels, springs tending to rotate said disks, an arm fixedly connected to each of said disks, means for detachably retaining said arms at one end of their travel, a series of keys normally disconnected from said arms but interchangeably connected therewith at the will of the operator.

6. In a marking-machine, the combination of the type-wheels, the peripherally-toothed disks, gear-wheels interposed between the type-wheels and the toothed disks, a series of keys, and arms upon said disks adapted to be engaged by dogging means at one end of their travel and interchangeably with any one of the series of keys when the same is depressed and after the respective arms have been released from said dogging means.

7. In a marking-machine, the combination of the type-wheels driving means for the type-wheels comprising disks provided with arms and gear-wheels between the type-wheels and the disks, and keys any one of which is adapted to engage with one or more of said arms at the will of the operator.

8. In a marking-machine, the combination of type-wheels, a series of dogs, intermediate mechanism adapted to engage said dogs with the respective type-wheels, means for individually disengaging said dogs from said intermediate mechanism, and the keys any one of which is adapted to be moved at the will of the operator so as to intercept the movement of one or more of said type-wheels.

9. In a marking-machine, the combination of the type-wheels, the driving mechanism for said wheels and including springs, the dogging devices for retaining the wheels in normal inoperative positions, means for disengaging said dogging devices against the action of springs, a series of spring-pressed keys normally held out of the path of said driving mechanism, and a transverse bar on each said key whereby one or more of said driving mechanisms may be engaged at the will of the operator.

10. In a marking-machine, the combination of the type-wheels, the driving mechanism for said wheels and including springs, the dogging devices for retaining the wheels in normal inoperative positions, means for disengaging said dogging devices against the action of springs, a series of spring-pressed keys normally held out of the path of said driving mechanism, a transverse bar on each key whereby one or more of said driving mechanisms may be engaged at the will of the operator and means for disengaging said driving mechanisms from said bars and reengaging the driving mechanisms with said dogging devices.

11. In a marking-machine, the combination of the type-wheels, the driving mechanism therefor and including springs and radial arms upon an element of each such mechanism, said arms being of unequal lengths and terminating at their outer ends in hooks, a series of keys having transverse bars normally held out of the paths of said bars but adapted so that any one of them may, at the will of the operator, be depressed to engage the longest of said arms and yet permit the other shorter arms passing freely therebeneath or, by still further depressing the bar of intercepting one or all of the said shorter arms.

12. In a marking-machine, the combination with the type-wheels, the driving mechanism therefor and including springs tending to rotate the type-wheels in a single direction, and a lever-arm adapted to be moved to engage said driving mechanism oppositely of said springs, said lever-arm being provided with a swivel-pin having a plurality of guards of unequal lengths.

13. In a marking-machine, the combination with the type-wheels, the driving mechanism therefor and including springs tending to rotate the type-wheels in a single direction, a lever-arm adapted to be moved to engage said driving mechanism oppositely of said springs, whereby, and through their joint action, a reciprocal rotary motion may be imparted to said type-wheels, and a brush device adapted to be set to simultaneously sweep the faces of all of said type-wheels as they are given such rotary motion.

14. In a marking-machine, the combination of two sets of type-wheels, driving mechanism therefor including means tending to rotate the type-wheels in a single direction, a single set of keys, and mechanism coacting

with the two sets of type-wheels and the keys whereby a type-wheel of either of said sets is coincidently and equally moved with a corresponding type-wheel of the other set to assume new rotary positions through the manipulation of a single one of said keys.

15. In a marking-machine, the combination of two sets of type-wheels, a single set of disk wheels having peripheral teeth, mechanism intermediate said disk wheels and both sets of type-wheels whereby any type-wheel of either such set is moved in unison with a corresponding type-wheel in the other set, means tending to rotate the type-wheels in a single direction and means for actuating any of said disk wheels whereby the said movements of the coacting type-wheels are predeterminately accomplished and controlled.

16. In a marking-machine, the combination with a plurality of type-wheels, the actuating mechanism therefor interposed between the same and a single series of keys, and springs tending to rotate the type-wheels in a single direction, the keys of said series being adapted to individually and predeterminately limit the movement of any or all of the type-wheels, of a platen adapted to be elevated to bear against said type-wheels.

17. In a marking-machine, the combination with a plurality of type-wheels, the actuating mechanism therefor interposed between the same and a single series of keys, the keys of said series being adapted to individually and predeterminately limit the movement of any or all of the type-wheels, of a platen adapted to be elevated to bear against said type-wheels, and a device actuated during the upward movement of the platen whereby ink is applied to said type-wheels.

18. In a marking-machine, the combination of a plurality of type-wheels, the actuating mechanism therefor interposed between the same and a single series of keys, the keys of said series being adapted to individually and predeterminately limit the movement of any or all of the type-wheels, a standard supporting said parts, a carrier reciprocally movable upon the standard and provided with a flexible platen adapted to be impinged against said type-wheels, an inking mechanism adapted to be actuated during the upward travel of said carrier to apply ink to said type-wheels, a spring tending to effect the return of said inking mechanism to its inoperative position prior to the termination of the upward travel of said carrier, and devices provided upon the carrier whereby the inking mechanism is positively moved out of operative position irrespective of said spring.

19. In a marking-machine, the combination of a standard, a carrier vertically movable on said standard, an inking device, a lever fulcrumed to said standard, connection between said lever and the inking device, a trigger-lever fulcrumed to the other lever, and means carried by the carrier whereby said trigger-lever is positively engaged by the latter during a portion of its ascending travel.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN DAVID CALDWELL.

Witnesses:

PIERRE BARNES,

E. H. ALVORD.